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**Anesthetic Management of Patient with Valvular  
Heart Disease**

# **Anesthetic Management of Patient with Valvular Heart Disease**

## **Introduction:**

- **VHD = damage or dysfunction of one or more heart valves (Aortic, Mitral, Tricuspid, Pulmonary)**
- **Stenosis → obstruction of flow**
- **Regurgitation → backward flow**
- **Causes: Rheumatic (past), Degenerative (present)**
- **>75% of people over 70 yrs. have moderate-to-severe VHD.**

## **Preoperative Evaluation:**

### **Goals:**

- 1. Identify lesion & severity**
- 2. Assess ventricular function**
- 3. Detect secondary organ effects**
- 4. Screen for CAD**

### **History:**

- Dyspnea, orthopnea, fatigue**
- Chest pain, edema, embolic events**
- Medications: diuretics, ACEIs,  $\beta$ -blockers, anticoagulants.**

## **Examination & Investigations:**

### **Physical signs:**

- **Left HF → S3 gallop, pulmonary rales**
- **Right HF → JVD, hepatomegaly, edema**
- **Murmurs on auscultation**

### **Investigations:**

- **Echo – gold standard**
- **ECG – arrhythmia/chamber enlargement**
- **CXR – cardiomegaly**
- **LFTs, PT/INR – if on anticoagulants.**

## **General Anesthetic Considerations:**

- 1. Maintain hemodynamic stability**
- 2. Continue cardiac medications**
- 3. Manage anticoagulation carefully**
- 4. Maintain sinus rhythm**
- 5. Avoid hypoxia, hypercarbia, acidosis, tachycardia**
- 6. Use invasive BP or CVP if severe lesion.**

## **Choice of Anesthetic Agents:**

- **Induction: Slow, titrated (Etomidate or low-dose Propofol)**
- **Maintenance: Balanced anesthesia (volatile + opioid)**
- **Vasopressors:**
  - **Phenylephrine preferred ( $\alpha$ -agonist)**
  - **Vasopressin/Norepinephrine if severe vasodilation**
- **Avoid:**
  - **Excessive vasodilation (stenosis)**
  - **Bradycardia (regurgitation)**
- **Goal: Stable HR, preload, afterload.**

## **References:**

- **Miller's Anesthesia, 9th Edition – Chapter 21: Valvular Heart Disease**
- **2020 ACC/AHA Guidelines for the Management of Patients with Valvular Heart Disease**

**Morgan & Mikhail's Clinical Anesthesiology, 7th Edition.**

**Chapter 19: Cardiac Anesthesia – Section: Valvular Heart Disease.**



**McGraw Hill Access Anesthesiology – Morgan & Mikhail**

**(<https://accessanesthesiology.mhmedical.com/book.aspx?bookid=3510>)**



**Good luck**